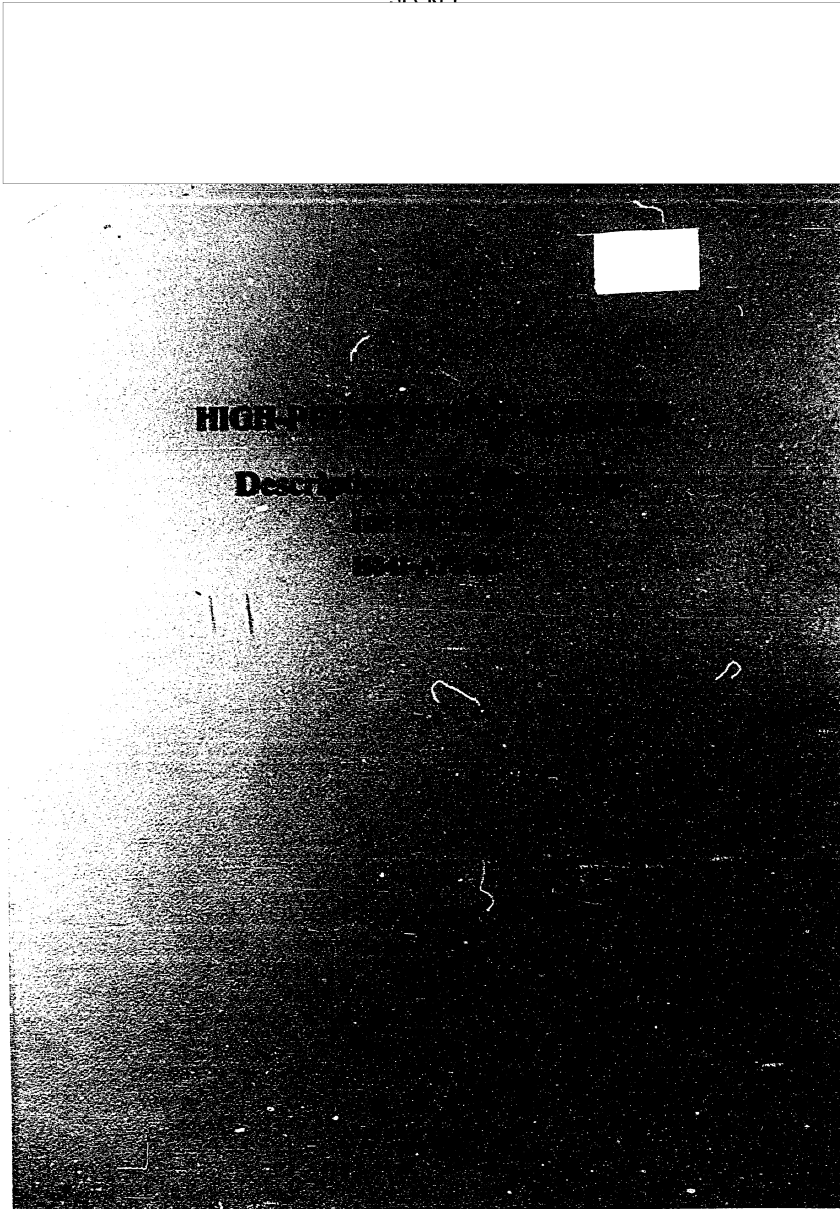


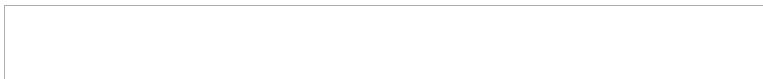
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Appendices: Appendix No.1  
High-Pressure Air Line Schematic  
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Three-Valve Manifold

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1. DESCRIPTION1.1. FUNCTION AND BASIC SPECIFICATIONS

The high-pressure air system is designed to store shipboard quantities of compressed air, to provide the compressed air for the various services and to recharge the banks.

The system is used:

1. To supply air to the emergency blowing system to blow the ballast tanks in case of broaching, to blow the safety tanks for normal surfacing, as well as for righting trimmed or listed ship by partially blowing the end and safety tanks.
2. To feed air to the Q-tank for blowing the latter after fast dive.
3. To supply air to the compartments in a emergency to create an air cushion.
4. To supply air to the intermediate pressure air system.
5. To supply air for blowing compensating tank No.2.
6. To supply air to the diesel-engine starting pipe line.
7. To supply air to the hydraulic system.
8. To supply air to another submarine.
9. To supply air to the drying devices operated on compressed air (to the OCB-1).
10. To feed air to the torpedo tube pipe lines.
11. To charge the bottles with compressed air from the compressors.
12. To remove pressure from the compartments with the help of the motor-driven compressor.
13. To take air from the base and through the diver's hose.

(a) Diesel-Driven Compressors

Index .....	DK-2
Type .....	horizontal, four-stage, single-acting with a suspended piston.

Capacity of one diesel-driven compressor at an intake temperature of 20°C, at an air delivery from 2 to a final discharge pressure of 100 kgf/cm<sup>2</sup> is 9 lit per minute.

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The compressors are located on the shock-absorbers in compartments V and VI. These compressors are used for charging the air bottles with compressed air when the submarine is shorting at the surface.

The emergency compressor is seated on the shock-absorbers in compartment VI. This is used for charging the air bottles with compressed air and for reducing pressure in all compartments when the submarine is submerged.

Water-oil separators (which are not equipped with valves) are mounted behind the compressors installed in compartments V and VI and before the torpedo tubes in compartments I and VII. The water-oil separators are used to remove moisture and oil particles from the compressed air.

54 air bottles carried on board the submarine are arranged as follows: 17 bottles are installed in the superstructure and seven - inside the pressure hull (six bottles in compartment II and one bottle in compartment IV).

To make resistance of the system higher and to facilitate its operation, the bottles are subdivided into eight banks. Air banks Nos 4 and 5 are divided into two sub-groups; air banks Nos 1 and 8 are divided into three sub-groups; air banks Nos 2, 3, 6, and 7 are not divided into sub-groups.

Air bank No.2 is to be used on the order of the Commanding Officer only.

The air bottles of a bank or a sub-group are interconnected through pipe lines which through the outboard valves enter the pressure hull.

Table No.1 shows the number of air bottles in a bank, capacity of the banks in litres and location of the bottles.

Table No.1

Bank No.	Number of air bottles in bank	Bottle capacity, lit	Bank rated capacity, lit	Location
1	3	4800	4800	In superstructure
2	3	4800	4800	In superstructure
3	3	4800	4800	In superstructure
4	3	4800	4800	In superstructure
5	3	4800	4800	In superstructure
6	3	4800	4800	In superstructure
7	3	4800	4800	In superstructure
8	3	4800	4800	In superstructure

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1	2	3	4	5
				of compart- ment I)
2	6	400	2400	In compart- ment II
3	4	400	1600	In superstruc- ture (in the vi- cinity of com- partment I)
4	8	400	3200	In superstruc- ture (in the vi- cinity of com- partment II)
5	7	400	2800	In superstruc- ture (in the vi- cinity of com- partments II and III)
6	1	400	400	In compart- ment IV
7	4	400	1600	In superstruc- ture (in the vi- cinity of com- partment II)
8	12	400	4800	In the super- structure (in the vi- cinity of com- partments II and III)
TOTAL	54		21600	

Each bank of the bottles is independently controlled by a  
common non-return valves of distributing manifold.

Bank Nos 1 and 2 are connected to valves 1 and 2;  
banks 3 and 4 valves 3 and 4;

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- air tanks Nos 1 and 2 are connected to valves 33 and 34 through ball-and-seat shut-off valves 16 and 51;

- air tanks Nos 1 and 2 are connected to valves 30 and 36 through ball-and-seat screw-down non-return valves 7, 8, 13, 55, 60, 64 and three-valve manifolds 12 and 56;

- air tanks Nos 4 and 5 are connected to valves 35 and 29 through screw-down non-return valves 17, 18, 22, 23.

To check the pressure in the distributing manifold, pressure gauge 34 is employed.

Air from the main distributing manifold is furnished:

- through valves 20, 21 and 27 to the emergency blowing system;
- through valve 28 to the vent pipe of the Q-tank;
- to the fore and aft mains through valves 37 and 38.

The fore and aft mains are connected as follows:

1. In compartment I - with valve 3 feeding the air to the torpedo tubes and to the drying devices OCB-1; with valves 6 and 86 feeding the air to the compartments; with three-valve manifold 12; with the emergency blow manifold and through screw-down non-return valve 5 with pipe union 4 feeding the air from the base.
2. In compartment II - with valves 83, 84 and 85 feeding the air to the compartments.
3. In compartment III - with valves 75, 77 and 81 feeding the air to the compartments; with valve 79 feeding the air to the intermediate pressure air system, with the blow pipe line of compensating tank No.2.
4. In compartment IV - with valves 39, 40 and 74 feeding the air to the compartments and with the hydraulic system.
5. In compartment V - with valves 43, 70 and 73 feeding the air to the compartments and through valves 45, 72, 42 and water-

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- oil separators 46 and 47 with the diesel-driven compressors; with the diesel-engine starting pipe line.
- 6. In compartment VI - with valves 48, 49 and 69 feeding the air to the compartments and with the motor-driven compressor through valves 54, 50 and water-oil separators 52 and 53.
  - 7. In compartment VII - with valve 67 feeding the air to the torpedo tubes; with valves 61 and 68 feeding the air to the compartments; with three-valve manifold 56; with the emergency blow manifold; and with pipe union 63 feeding the air from the base through screw-down non-return valve 62.

To take air or to feed it to another submarine, double pipe unions 4 and 63 are installed in the superstructure, a set of pipes being also provided. These pipes are used for delivering the compressed air to another submarine.

#### (a) Air Bottles

These are used to store air compressed to a pressure of 200 kgf/cm<sup>2</sup>.

Screwed into the necks of the bottles are the heads which are just union nuts with welded bent pipes meant for blowing the bottles, i.e. for removing the condensate.

Tight joint between the head and bottle is ensured by copper gaskets.

All the air bottles inside as well as outside the pressure hull are secured on the seatings with clamps through lead gaskets.

The air bottles are mounted on the seatings with a slope to the side of the necks with heads, thus ensuring flowing of the condensate to the head with a bent pipe.

The bottles are installed so that the pipes of the heads be arranged in the vertical plane with the bent end down. To in-

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stall the air bottles correctly, notches are marked on the heads to indicate the position of the pipe in the bottle. The notch on the bottle head shall be in the vertical down position, otherwise no blowing will be effected.

(b) HP Air Distributing Manifold

Distributing manifold 26 is mounted in compartment III between frames 56-57, starboard (See Appendices Nos 1 and 2).

The manifold consists of a brass body with eight screw-down non-return valves 29, 30, 31, 32, 33, 34, 35 and 36; six shut-off valves 20, 21, 27, 28, 37, 38 and one drain valve 78.

The shut-off valves seated on the distributing manifold are of the standard type. When rotating the handwheel, the square end of the handwheel rod rotates the nut which in its turn shifting along the thread of the valve carries the free-seated valve.

The screw-down non-return valves have three positions: OPEN, SHUT when charging and blowing the bottles and NO-RETURN position when feeding HP air from the bottles to the miscellaneous services.

In their design the screw-down non-return valves are similar to shut-off valves, but they a spring which presses the valve to the saddle.

The pressure gauge board is installed in compartment III above manifold 26. The board mounts 9 pressure gauges and is installed through shock-absorbers.

The pressure gauges are used to check the pressure in each tank and in the manifold. The pressure gauges are connected with the screw-down non-return valves and with manifold 26.

The absolute pressure in each compartment is determined by the special pressure gauge MC-160, the excessive pressure in the adjacent compartments is determined by the standard pressure gauges.

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Three-valve manifolds 11 and 12 are mounted in compartments I and VII and are used to disconnect air tanks Nos 1 and 2 from distributing manifold 10 of compartment III and to use the air kept in them for emergency blowing of the main ballast tanks from compartment I or VII (See Appendices Nos 1 and 3).

The manifold consists of a brass body and three shut-off valves.

#### (d) Water-Oil Separator

This consists of steel shell 1 with threaded head 3. The head has two pipe unions to connect to the system, pipe 2 entering the shell being secured in the head (See Dwg 1).

Air through the pipe union and the pipe enters the shell. Moisture and oil contained in the air drop on the bottom of the shell. Now the air free from moisture and oil through the second pipe union enters the system.

In the bottom of the shell there is a branch pipe with hand-operated valve 4 to blow the water-oil separator.

#### (e) Air Filter $\Phi$ T-15/200

This consists of a body which houses mesh 4 (See Dwg 3).

The air entering the filter through the pipe union passes through mesh 4 which purifies the air from small particles contained in the air; clean air enters the system through the second pipe union.

### C. CONTROL INSTRUMENTS

To check the absolute pressure and excessive pressure in the compartments, as well as to check the pressure of compressed air in the system, the pressure gauges are used.

The scale of each pressure gauge has a red line indicating the permissible working pressure in the system.

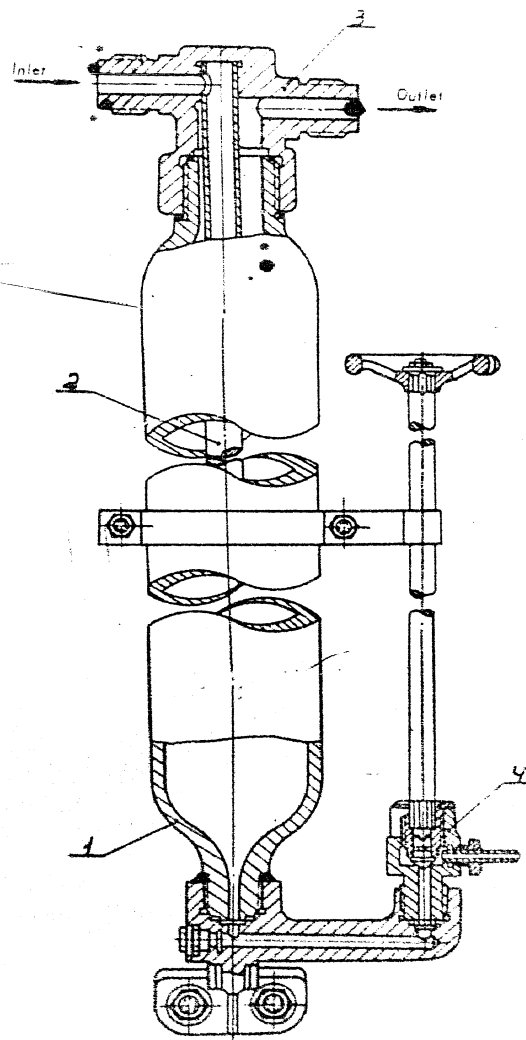
For location of the pressure gauges, see the drawings of the pressures and the gauges.

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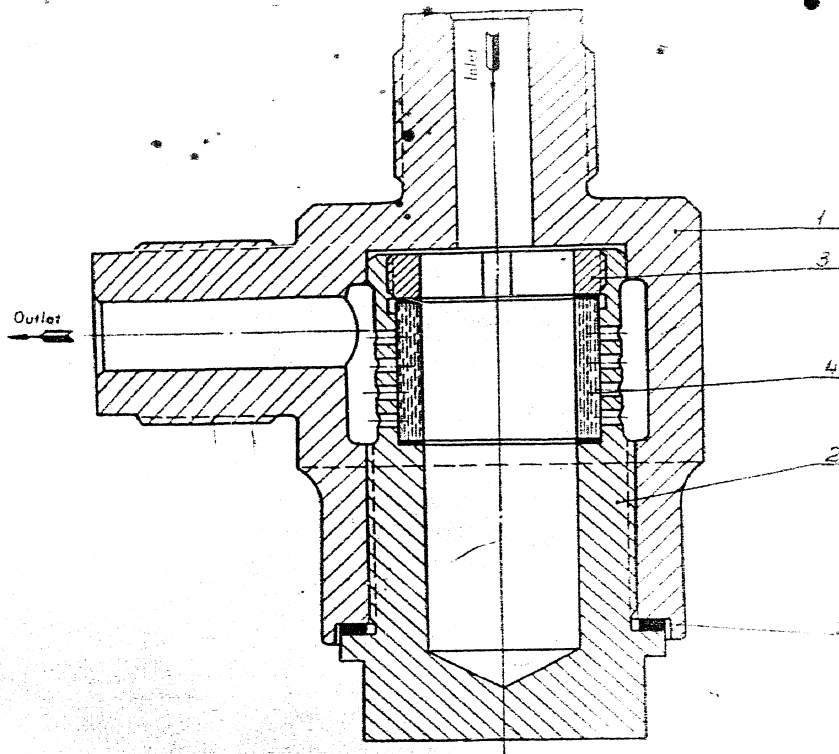
Dwg 1. Water-Oil Separator, Dwg. 1:1  
1-shell, 2-pipe, 3-head, 4-valve

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Dwg 2. Air Filter  $\Phi 115/200$   
1-body; 2-plug; 3-bush; 4-mesh; 5-gasket

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Table No.2

1	2	3	4	5
1	Description	Type of instrument	Maximum working pressure (red line), kgf/cm <sup>2</sup>	Location
14	Pressure gauge to measure absolute pressure in compartments	MC-160	10	In compartments I and VII on boards for two pressure gauges; in compartments II, III, IV, V and VI on boards for three pressure gauges
15	Pressure gauges to measure excessive pressure in compartments II, IV and VI	MTK100Ex16/10	10	In compartments I and VII on boards for two pressure gauges; in compartment III on board for three pressure gauges
16	Pressure gauges to measure excessive pressure in compartments II, III, IV, V, VI and VII	MTK100Ex1.6/I	1	In compartments II, IV, V, VI on boards for three pressure gauges

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1	2	3	4	5
24	Pressure gauge to measure pressure in distributing manifold	MTK100Br400/200	200	In compartment III on board for 9 pressure gauges
25	Pressure gauges to measure pressure in banks Nos 1 - 8	MTK100Br400/200	200	In compartment III on board for 9 pressure gauges

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11. MAINTENANCE INSTRUCTIONSA. GENERAL SUPERVISION AND MAINTENANCE

1. When operating the system, pay special attention to tightness of the joints, check the fittings for condition, make sure that the instruments are in good order.

2. See to it that all the pressure gauges be sealed. In case the instruments produce incorrect readings, or if they are unsealed or the time of their checking is up, they shall be sent for checking or replaced.

B. PREPARATION OF THE SYSTEM  
FOR PUTTING TO SEA

Prior to putting to sea, the bottles shall be charged with air to a pressure of 200 kgf/cm<sup>2</sup>. The permissible stock of compressed air in the bottles and special bank to be used on the Commanding officer's order shall be not less than 85% and 100% respectively.

1. Initial Position

The fitting should be in the following positions:

3. On the distributing manifold of compartment III:

- screw-down non-return valves 29, 30, 32-36 should be placed in the NO-RETURN ("H") position;
- screw-down non-return valve 31 of the special bank should be placed in the SHUT ("3") position and sealed;
- shut-off emergency blow valves 20, 21, 27, 4-tank blow valve 28 and HP air main valves 37 and 38 should be placed in the OPEN ("O") position.

4. On the three-valve manifolds of compartments I and VII:

- shut-off valves 10, 11, 57, 59 should be placed in the OPEN ("O") position and sealed;
- shut-off valves 9, 58 should be set in the SHUT ("3") position and sealed.

5. Outboard screw-down non-return valves 7, 8, 12, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64 should be placed in the NO-RETURN ("H") position;

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- valves 5, 62 to receive air from the main should be placed in the NO-RETURN ("H") position and sealed.

6. Outboard shut-off valves 18, 51 should be placed in the OPEN ("O") position and sealed:

- shut-off valves 41 and 82 should be placed in the OPEN ("O") position and sealed. Check valve 78 should be placed in the OPEN ("O") position, the valve shall not be sealed.

7. Non-return shut-off valves 42, 72 from the diesel-driven compressor and from the motor-driven compressor 50 should be placed in the NO-RETURN ("H") position.

8. All the remaining valves are locked and opened only when needed.

Note: When at base, the HP air bank on service shall be always connected to the main, i.e. its screw-down non-return valve on the distributing manifold must be in the NO-RETURN position. The rest of the screw-down non-return valves on the distributing manifold shall be in the SHUT position. The pressure of air in the air bank on service shall be not less than 100 kgf/cm<sup>2</sup>.

## 2. Charging the Bottles with Air

### (a) Charging the Air Bottles with Air from Compressors

The bottles may be charged with air by one, two or three compressors.

For maintenance of the compressors, strictly follow their Maintenance Instructions.

All the air banks shall be charged at a time. When charging the air banks, proceed as follows:

9. Open valve 45 in compartment V and valve 46 in compartment VI.

10. Open valves 29, 30, 31, 32, 33, 34, 35 on the distributing manifold.

11. Open outboard valves 7, 8, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28.

12. If the special air bank is charged, open valve 31 on the distributing manifold.

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13. When the compressor operates for charging the air bottles, watch the air pressure by the pressure gauges on board 25 at the distributing manifold and on the boards at the compressors.

14. After a pressure in the bottles being charged has reached  $200 \text{ kgf/cm}^2$ , set their screw-down non-return valves on the distributing manifold and the outboard valves to the initial position.

15. When charging the bottles every 30 minutes blow the water-oil separators of the compressors by opening their blow valves and every hour drain valve 78 on the bottle blow distributing manifold.

16. Every two hours after all the bottles have been charged and the compressors have been stopped, blow the bottles by banks.

In a day repeat blowing (if the situation does not permit blowing when needed). Air may be consumed independently of blowing.

Time required for opening drain valves when blowing water-oil separators and manifolds is 5 - 10 sec.

17. When blowing each air bank, open drain valve 78 on the distributing manifold and set the screw-down non-return valve of the air bank being blown to the NO-RETURN position. The rest of the screw-down non-return valves shall be shut.

18. After blowing all the air banks, shut drain valve 78 and bring the system to the initial position.

Note: If necessary, the air banks may be charged separately; in this case open the outboard valve of the air bank being charged and the respective valve on the distributing manifold.

(b) Time Necessary for Charging the Air Bottles

The calculated time necessary for charging all the bottles with air from 0 to  $200 \text{ kgf/cm}^2$  is given in Table No.3.

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Table No. 3

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Ref. No.	Description	Air banks								Total
		1	2	3	4	5	6	7	8	
1	Diesel-driven compressor	9 hrs	4 hrs 30 min	3 hrs	6 hrs	5 hrs 15 min	45 min	3 hrs	9 hrs	40 hrs 30 min
2	Two diesel-driven compressors	4 hrs 30 min	2 hrs 15 min	1 hr 30 min	3 hrs	2 hrs 40 min	25 min	1 hr 30 min	4 hrs 30 min	20 hrs 20 min
3	Motor-driven compressor	4 hrs 30 min	2 hrs 15 min	1 hr 30 min	3 hrs	2 hrs 40 min	25 min	1 hr 30 min	4 hrs 30 min	20 hrs 20 min
4	Two diesel-driven and one motor-driven compressors	2 hrs 15 min	1 hr 10 min	45 min	1 hr 30 min	1 hr 20 min	15 min	45 min	2 hrs 15 min	10 hrs 15 min
5	Diesel-driven and motor-driven compressors	3 hrs	1 hr 30 min	1 hr	2 hrs	1 hr 45 min	15 min	1 hr	3 hrs	13 hrs 30 min

Note: Calculations are done by the rated capacity of the bottles and by the rated capacity of the compressors.

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## (c) Charging the Air Bottles with Air from Base

See to it that the base-to-ship air supply pipe line be clean. Prior to connecting this pipe line to the shipboard system, blow it with air.

Air from the base compressors shall be fed to the submarine through the HP air drying and purifying units or through two water-oil separators mounted at each compressor.

When the compressors are in operation, the water-oil separators shall be blown by opening the blow valves every half an hour.

Air may be taken through the pipe lines of compartment I or VII, for which purpose proceed as follows:

19. Unscrew the nut-plug from pipe union 4 or 63 and connect the air supply pipes (which are included into the base equipment) or through the diver's hose.

Caution! Lest solid particles should get into the air supply line from the base, thoroughly blow it before connecting it to the pipe union.

20. Charge the bottles with air proceeding in accordance with the directions outlined under Items 11-15.

21. After charging the bottles, blow them proceeding in accordance with the directions outlined under Items 16-18, after which bring the system to the initial position.

## (d) Supplying Air to Another Submarine

To supply air to another submarine, proceed as follows:

22. Assemble special pipes stored in the superstructure, join one end of the pipe line to pipe union 4 or 63 (in the vicinity of compartment I or VII) and pass the other end of the assembled pipes to another submarine where it shall be connected to the similar pipe union.

## 23. To feed the air:

(a) from air bottles - open (set to the OPEN position) outboard screw-down non-return valve 5 or 62, shut screw-down non-return valves on manifold 46, except for the banks from which air is to be delivered;

(b) from the compressors - open valve 5 or 62 and valves 36, 45, 54.

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24. Feeding the air to the torpedo tubes in the initial position, proceeding in accordance with the instructions outlined under Items 3-7.

### C. STARTING, DURING-OPERATION MAINTENANCE AND STOPPING

- Caution!** 1. Once a day blow the bottles through drain valve 78 on the distributing manifold by opening it for approximately 5 sec.  
 2. Prior to connect for service a new air bank, blow it through the distributing manifold.  
 3. In case pressure in the bottles drops below 100 kgf/cm<sup>2</sup>, take corrective measures to re-charge the bottles.

25. To feed air to the torpedo tubes (for charging the impulse flasks) as well as to the torpedoes, open valve 3 or 67 at a pressure in the banks ranging from 180 to 200 kgf/cm<sup>2</sup>.

If the pressure in the air banks is below 180 kgf/cm<sup>2</sup>, additionally open valve 45 or 54 of one of the compressors to supply air to the torpedoes and start the compressor.

**Caution!** Prior to feeding the air, blow the water-oil separators on the pipe line running to the torpedo tubes; in the course of feeding the air every 10 minutes blow the water-oil separators.

26. To feed air to the compartments, open the AIR TO THE COMPARTMENT valves; watch the air pressure by pressure gauges 14, 15 and 19 in the compartments.

27. To remove pressure from the compartments when the submarine is submerged, start the motor-driven compressor of compartment VI.

28. To transfer air from compartments I-V and VII to compartments VI and VIII, open the vent pipes by opening the respective sluice valves in the compartments.

29. To feed air to the intermediate pressure air system, open valve 79 and proceed in accordance with intermediate pressure air system operating instructions.

30. To feed air to the diesel-engine starting pipe line, proceed in accordance with the Maintenance Instructions for the diesel-engine starting pipe line diesel-driven compressor and the control pipe lines of the pneumatic clutches.

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30. To charge the hydraulic bottle with air, proceed in accordance with the hydraulic system operating Instructions.

31. To blow the main ballast tanks from compartment I or VII, open valve 9 and shut valve 10 on manifold 12 or open valve 58 and shut valve 59 on manifold 56.

32. When feeding the air to the drying devices OCB-1, open valve 3 and proceed in accordance with the periscope arrangements operating Instructions.

**Caution!** Prior to feeding the air to the hydraulic system, to the diesel-engines starting pipe line and to the drying devices OCB-1, blow the bottles.

33. The air from the special air bank may be consumed on the permission of the Commanding Officer only.

34. After the respective procedure outlined under Items 25, 26, 27, 28, 31, 32 is over, bring the system to the initial position.

#### D. MAINTENANCE DURING PROTRACTED SHUT-DOWN PERIOD

35. To ensure resistance of the submarine during protracted shut down period when she is afloat, the HP air bank on service shall be always connected to the main, i.e. the screw-down non-return valves on its distributing manifold shall be in the NO-RETURN position. The rest of the screw-down non-return valves of the air banks should be shut. The air pressure in the air bank on service shall be not less than 400 kgf/cm<sup>2</sup>. For supervision and maintenance of the system proceed in accordance with the directions outlined under Sections A and F (See pages 1 and 2).

36. Every time before disassembly of the system, proceed to test the pipe line be under pressure, otherwise disconnected the pipe line to relieve the pressure.

For disassembly and reassembly of the joints and valves, see not to affect the tightness of the adjacent joints.

#### E. TROUBLES AND REMEDIES

37. Possible troubles and their remedies are:

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No.	Trouble	Cause	Remedy
1	Air leakage through joints	Joint untight	(a) Tighten up joints (b) Replace gasket
2	Air leaks into system through shut valves	Valves lapped untightly	Disassemble valve, lap valve saddle
3	Pressure in torpedo tube pipe line drops	Air filter 1 or 65 clogged	Close valve 3 or 67 and check valves on torpedo tube air line and clean air filter 1 or 65 or replace air filter mesh
4	Air leaks through non-return valves in reverse direction	Valve packing untight	Disassemble valves, lap disc

#### P. PREVENTIVE MAINTENANCE AND REPAIRS

##### Daily Inspection

38. Remove dust, dirt and inspect the pipe lines, fittings and pressure gauges, make sure that the seals on the sealed fittings and pressure gauges are present.

39. Turn all the unsealed valves except for the valve feeding the air to the compartment; work out too tight valves.

##### Weekly Inspection

Perform the procedures of weekly inspection and repair to:

40. Turn and work out all the sealed valves.

41. Turn and work out the valves feeding the air to the compartment, having preliminarily shut the respective valves in the manifold of the control room.

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MONTHLY INSPECTION

Perform the procedures of weekly inspection and besides:

- 42. Check attachment and condition of the bottles and of the pipe lines inside as well as outside the pressure hull.
- 43. Disassemble and repair too tight valves.

Annular Inspection

44. This inspection is meant to find and eliminate defects in painting of the bottles and of the system as a whole, as well as untightness in the pipe lines and fittings.

45. Clean and paint corroded sections. Eliminate faults detected in the pipe lines and in the parts securing the pipes and bottles, repair leaky joints, repair valves, if necessary, lap the working surfaces. Clean the filters.

Check the pressure gauges in the laboratory.

Replace defective pressure gauges, if any.

46. After damage to the fittings and joints has been removed, test the system for tightness under an air pressure of 200 kgf/cm<sup>2</sup> for 24 hours; no leakage of air is permissible taking into account change in temperature.

47. The system should be tested for tightness with the compressors disconnected and the valves open except for those employed for relieving pressure and mounted directly before the services.

48. The pressure of air should be increased to 200 kgf/cm<sup>2</sup> by steps, checking the condition of the air line under pressures 30, 100, 150 kgf/cm<sup>2</sup>.

49. The first test measurement of the pressure shall be effected by the pressure gauge in two hours after the pressure has reached 200 kgf/cm<sup>2</sup>.

50. Troubles detected during tests shall be eliminated after pressure has been removed, after which the test shall be repeated.

51. The system shall be tested for tightness after running for a period of operation to find and eliminate possible leaks.

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Inspection Every Five Years

52. The bottles are inspected and retested once in five years, which is timed to the running repair of the ship, as a rule.

Retesting the bottles is carried out to detect the interior and exterior walls of the bottles for corrosion, to restore anti-corrosive coating of the surfaces to prevent them from further eating away by corrosion; to check the bottles for strength, thus ensuring trouble-free operation of the HP air system.

During inspection do the following:

53. Dismantle the bottles.

54. Clean the interior and exterior surfaces of the bottles by a sand-jet or another method.

55. Thoroughly inspect the interior and exterior surfaces of the bottle, having paid special attention to cracks and pits.

56. The bottles which meet the requirements of internal and external inspections are checked under a test hydraulic pressure of 300 kgf/cm<sup>2</sup>.

57. The bottle is kept under a test pressure for 2 minutes, after which the pressure is reduced to a working value and the bottle is inspected to detect faults. After inspection, the pressure shall be reduced further.

58. The bottles cannot be used in case of drops of water or local sweating.

59. If the results of retesting the bottles are satisfactory, the following data are stamped on the bottles:

- the name of the plant at which the bottle was retested;
- the date of the bottle being tested and the date of the next test.

60. Place the packing gasket and screw a standard head into the neck of the bottle.

61. To check the bottle for tightness, charge it with air to a working pressure and then by coating it with soap-suds or by placing the bottle into the bath with water. No leakage of air is considered permissible.

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62. Mount the bottles in their places and check the HP air system for tightness proceeding in accordance with the directions outlined under Items 46-50.

G. REFERENCE DATA

63. The service life of the flexible hoses, dia 15, P = 200, is five years, time when kept at the storehouse being included.















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**Note:**

	Bulkhead casting
	Union connection
	Cross connection
	T-piece
	Flexible hose
	Pressure gauge
	Air filter
	Water check valve
	Non-return valve
	Valve
	Non-return valve
	Air filter
	Stop valve
	Stop valve

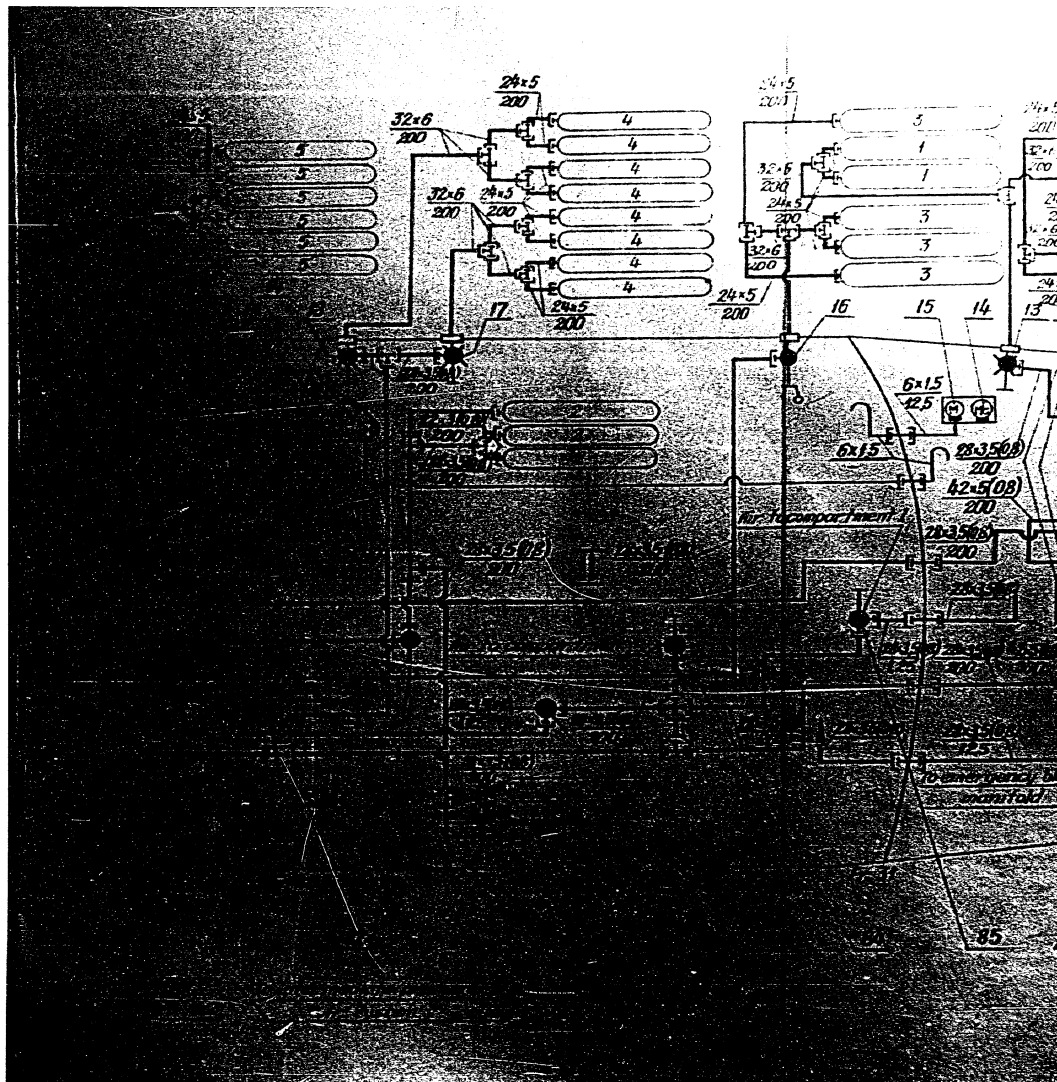
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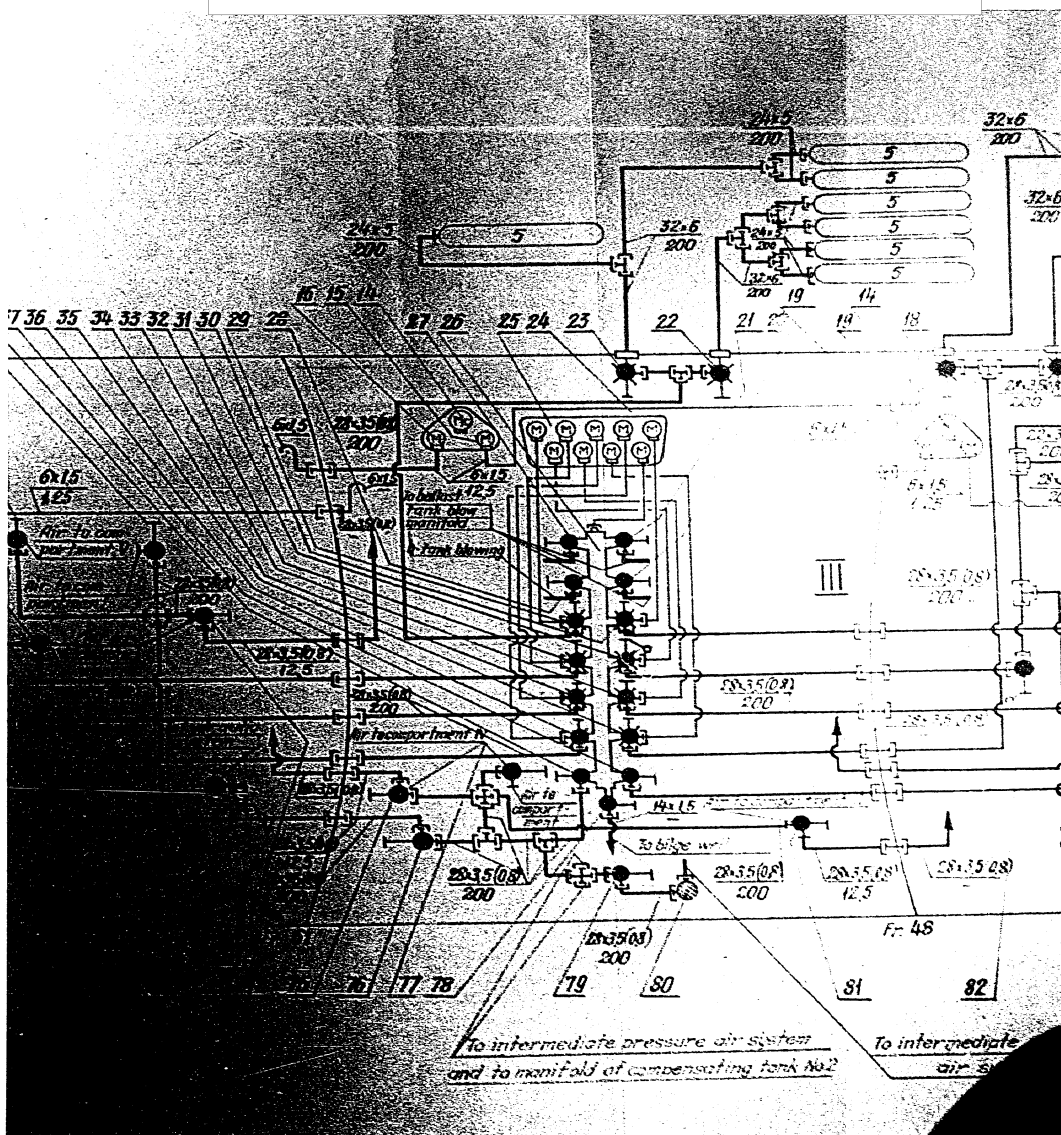
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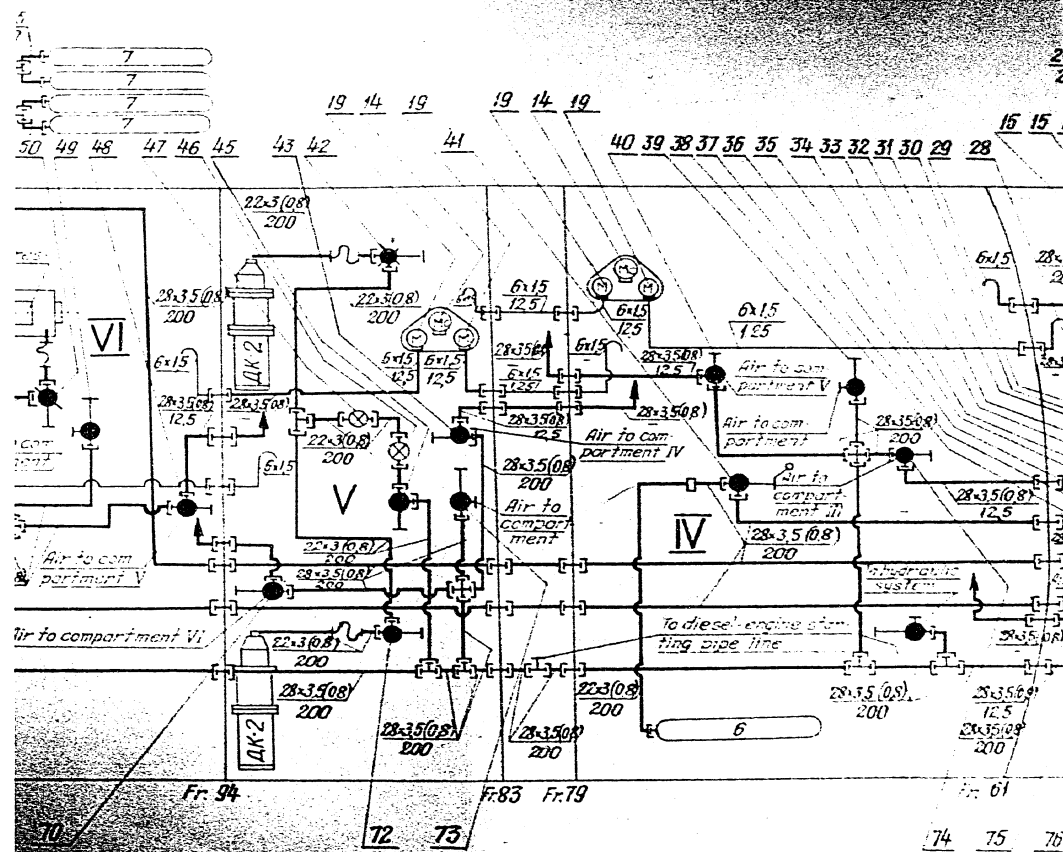


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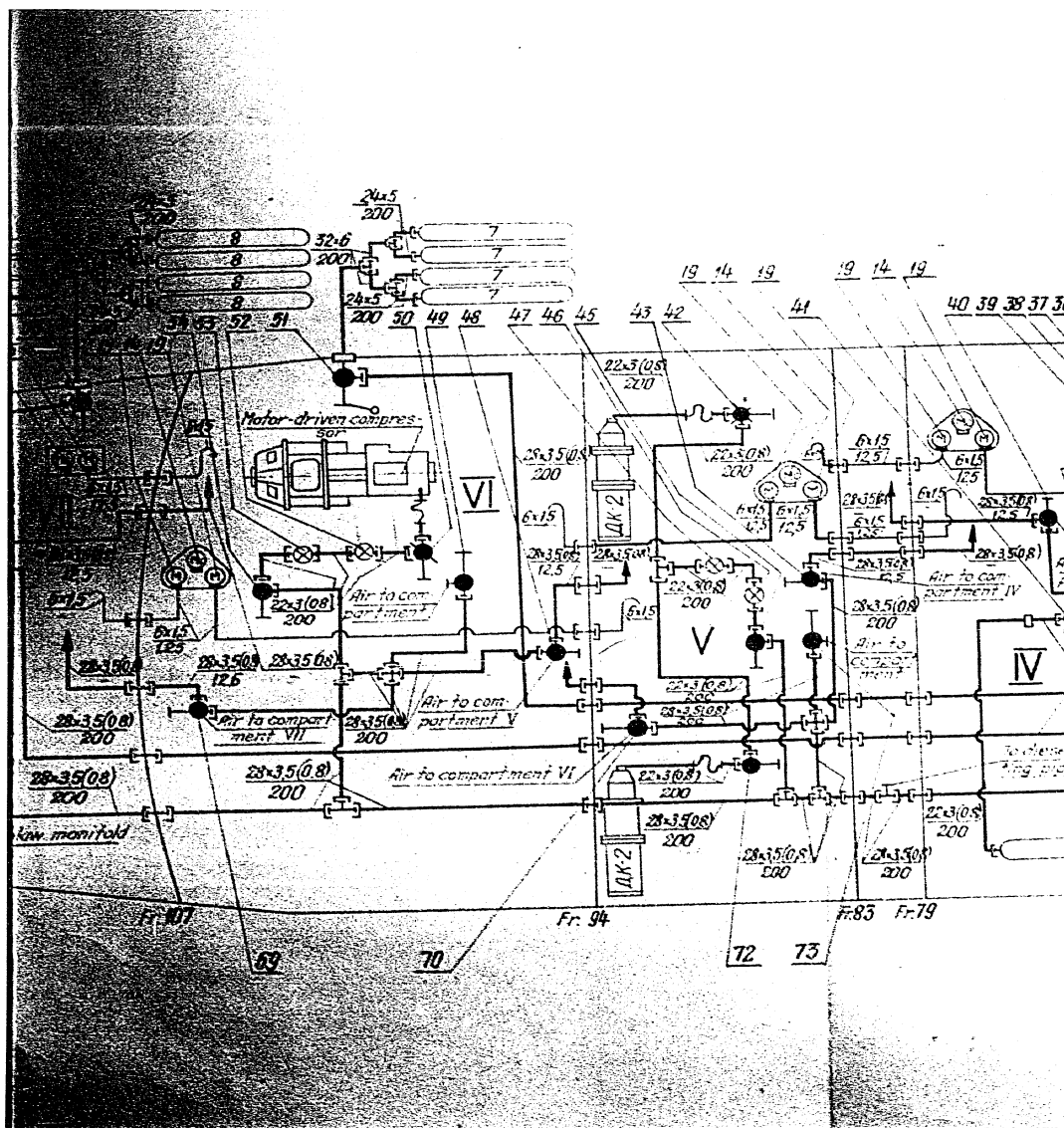


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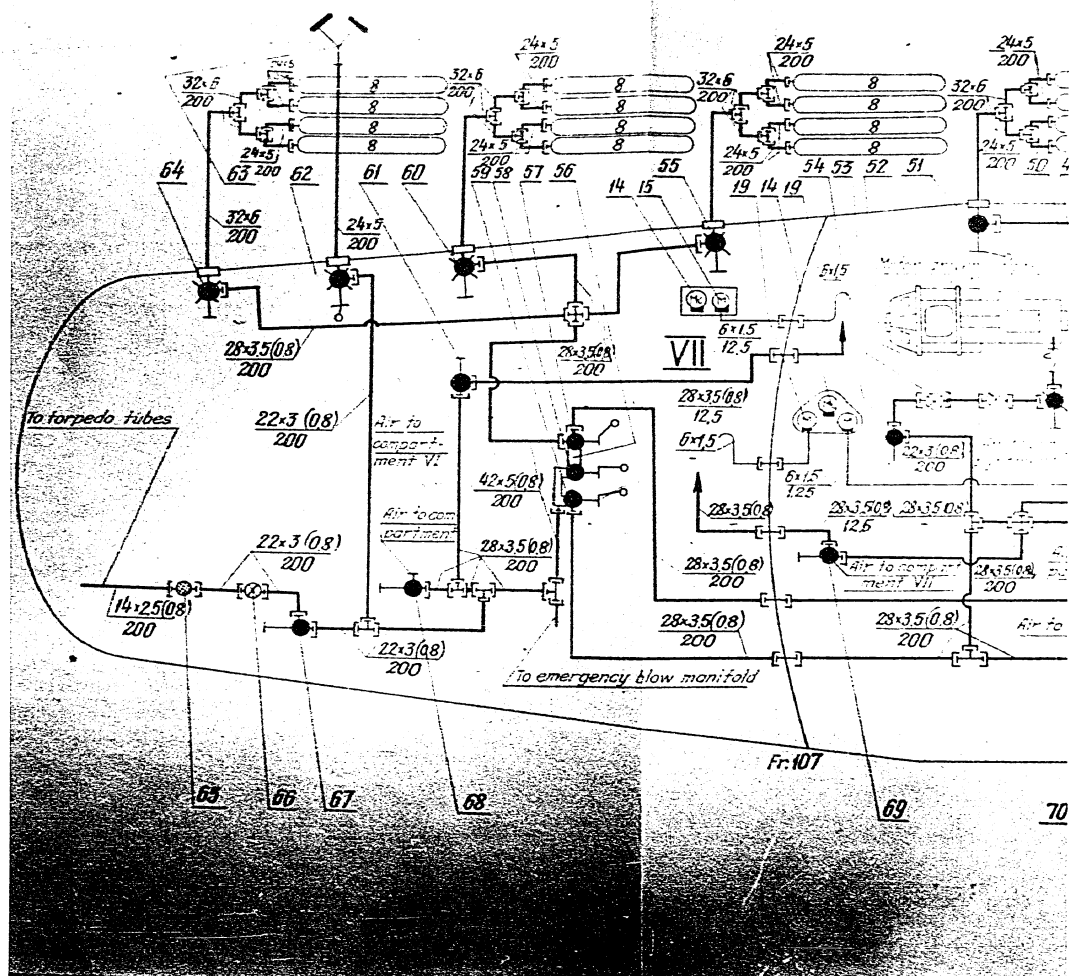


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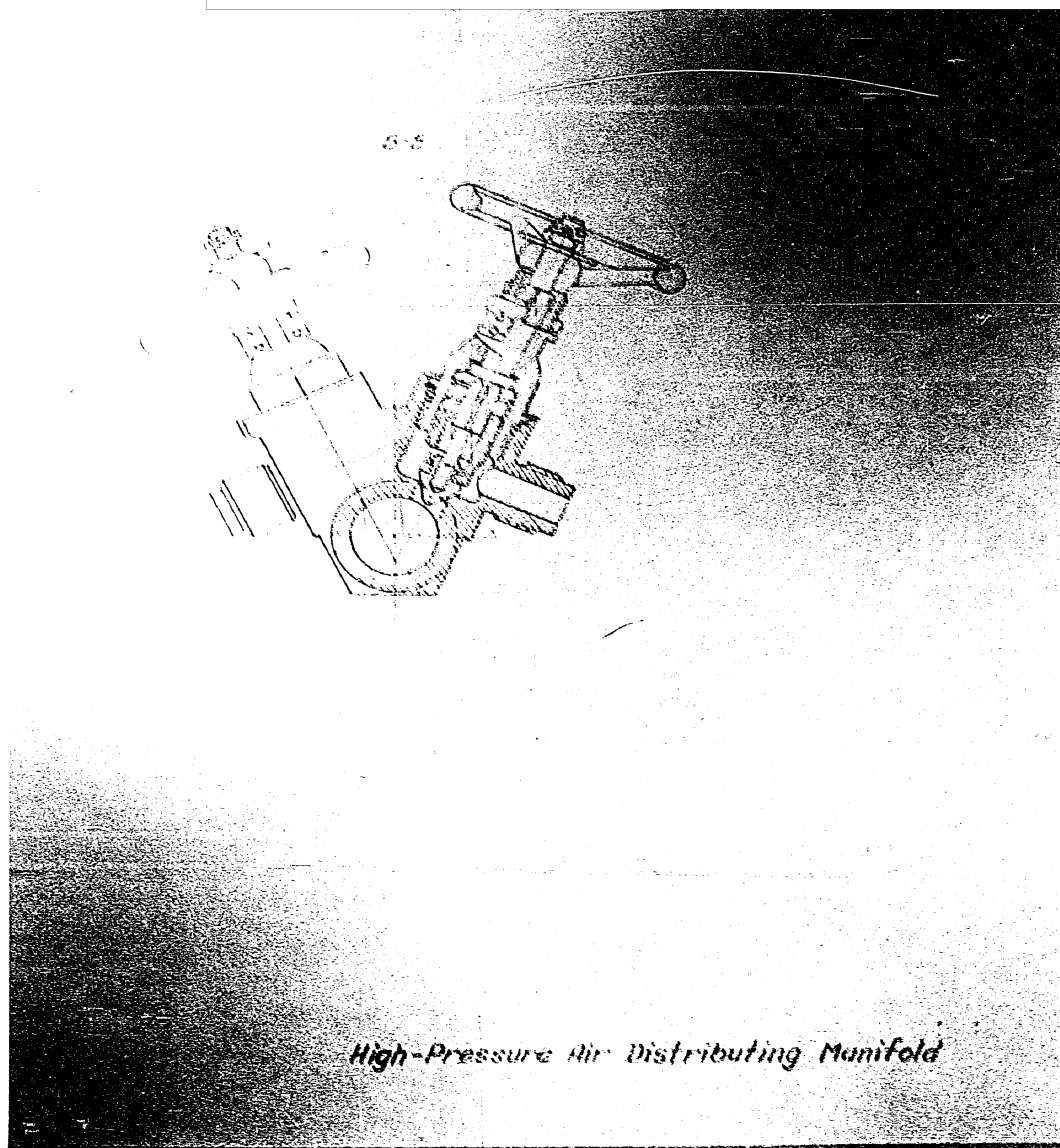


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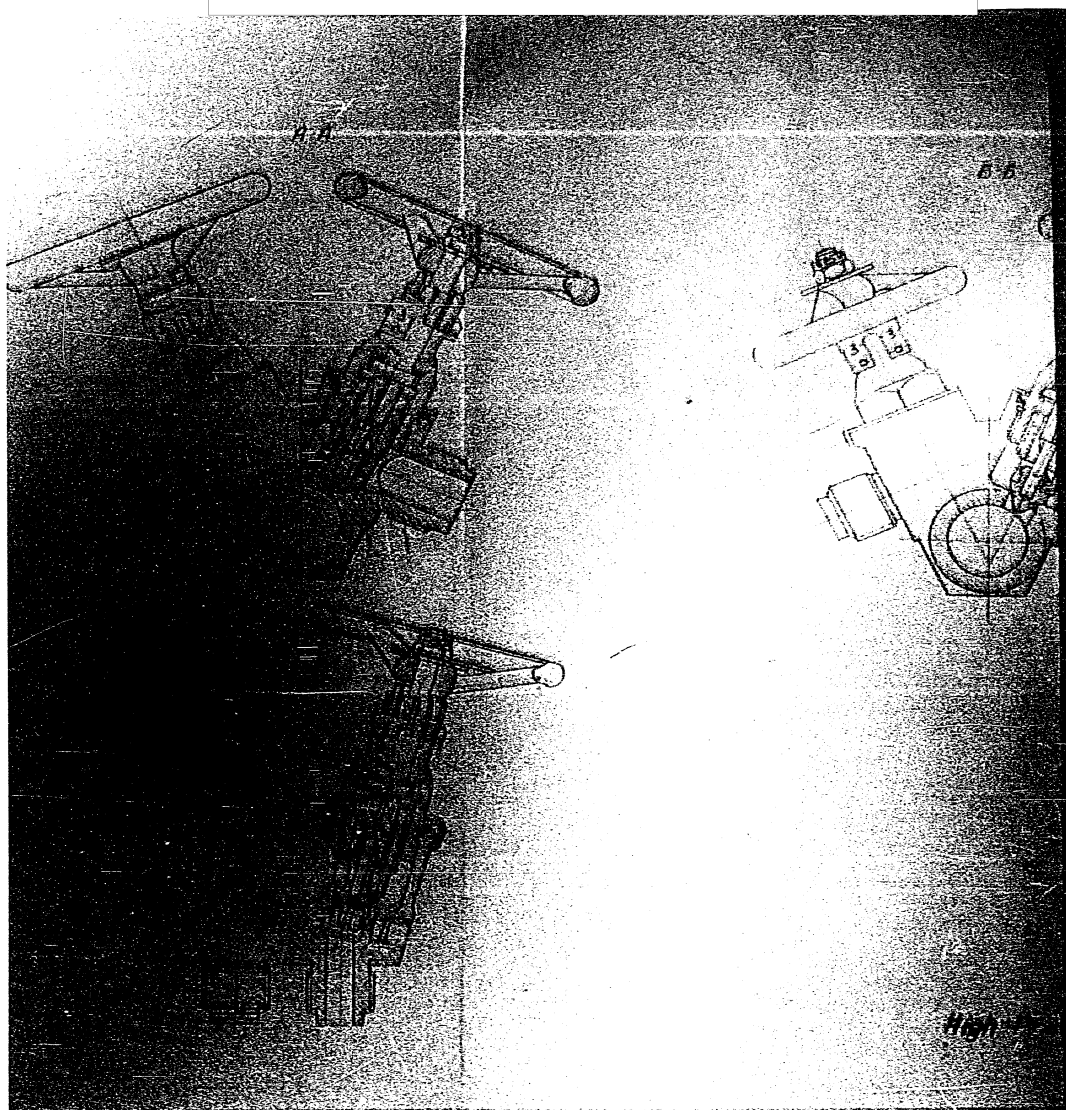
*High-Pressure Air Distributing Manifold*

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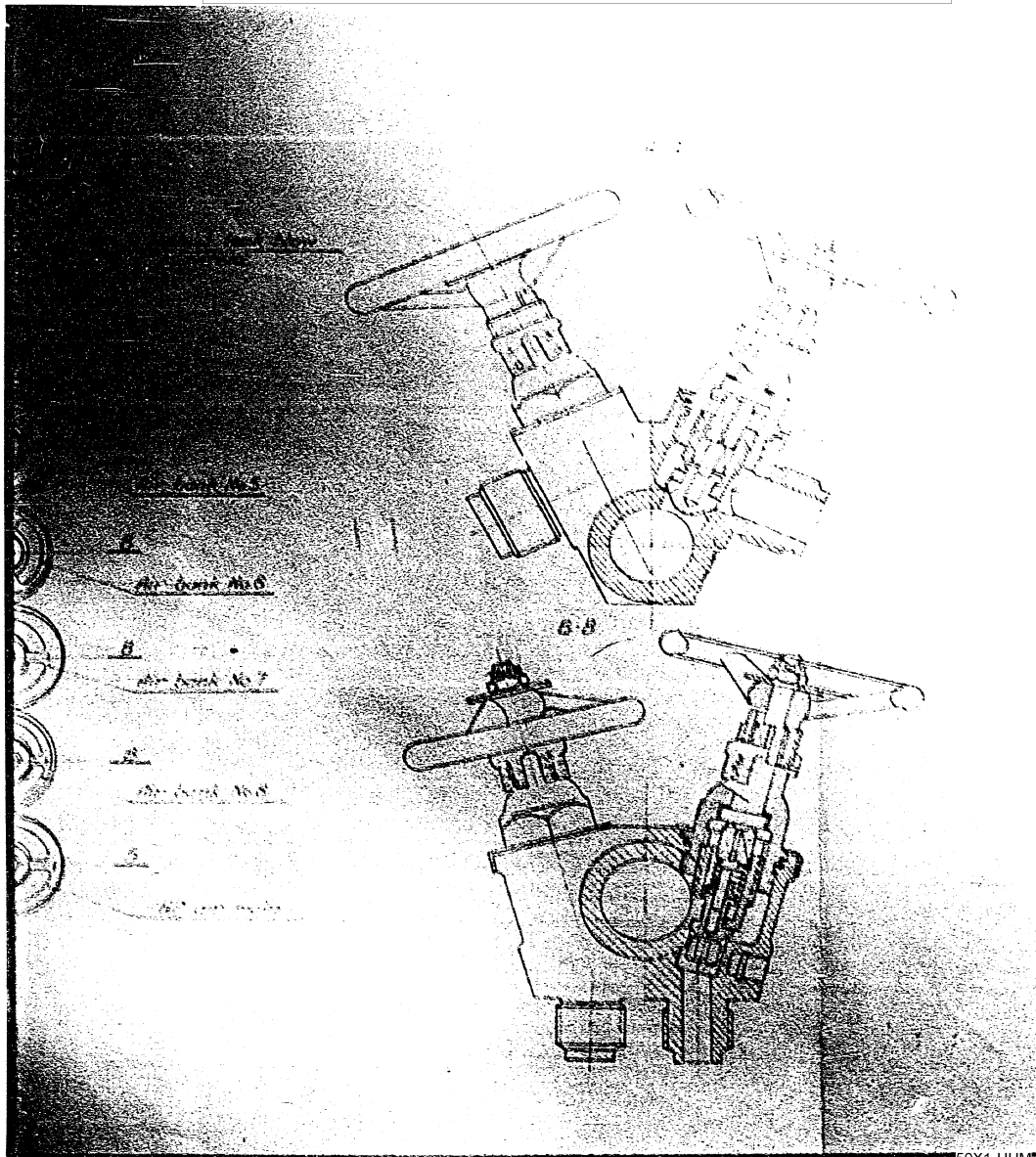


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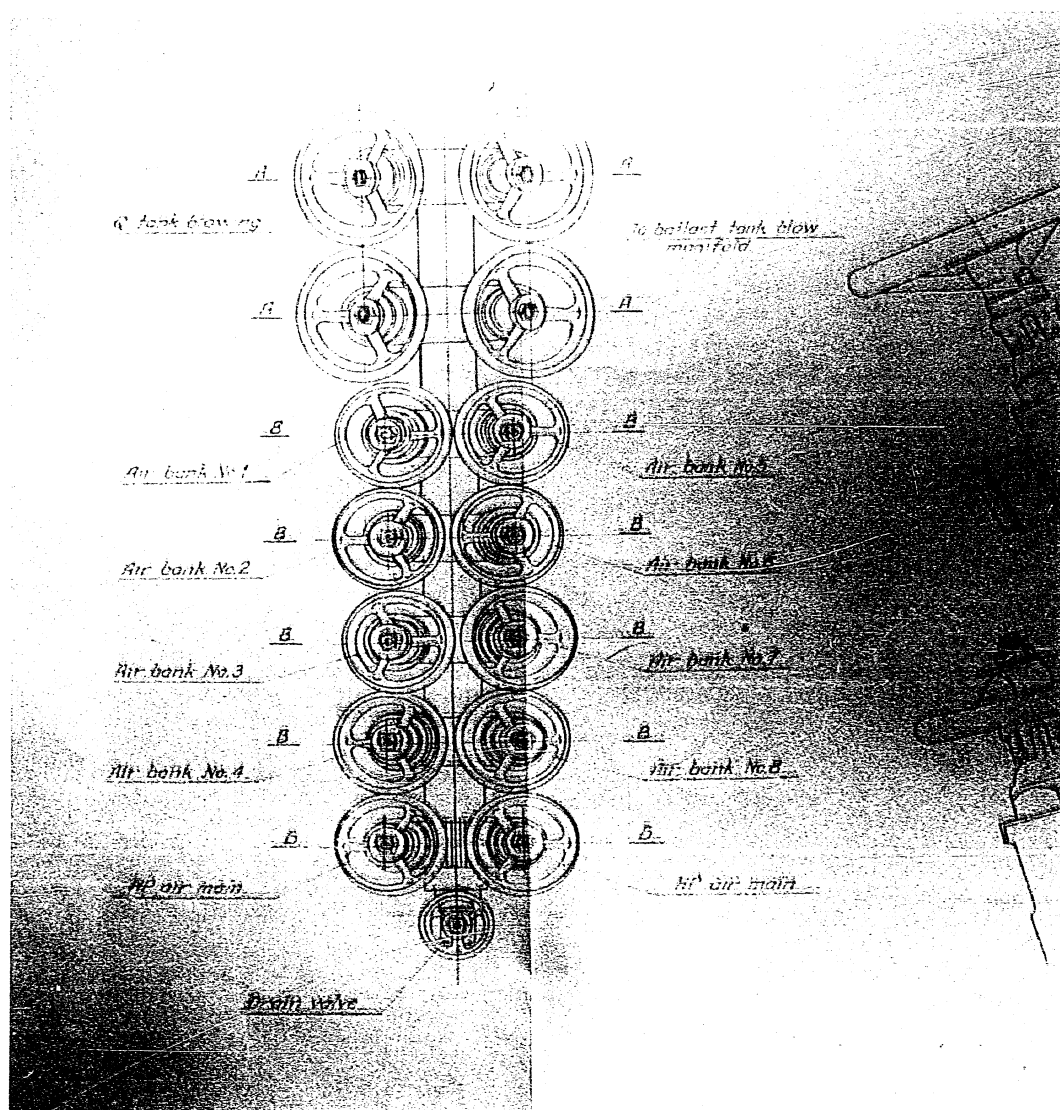


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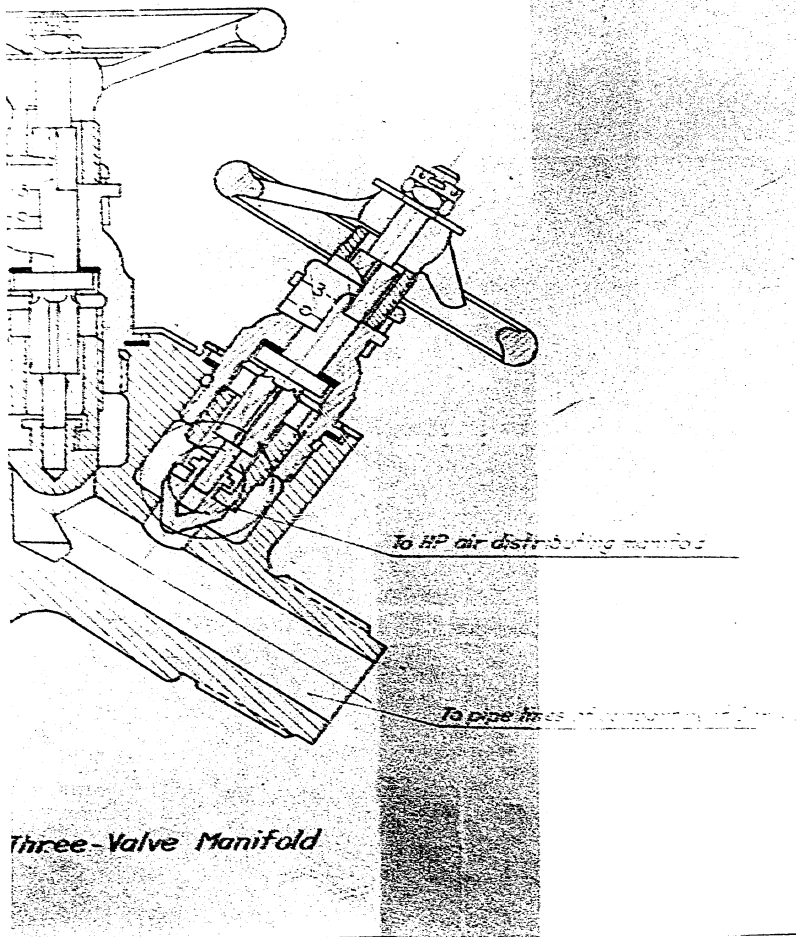
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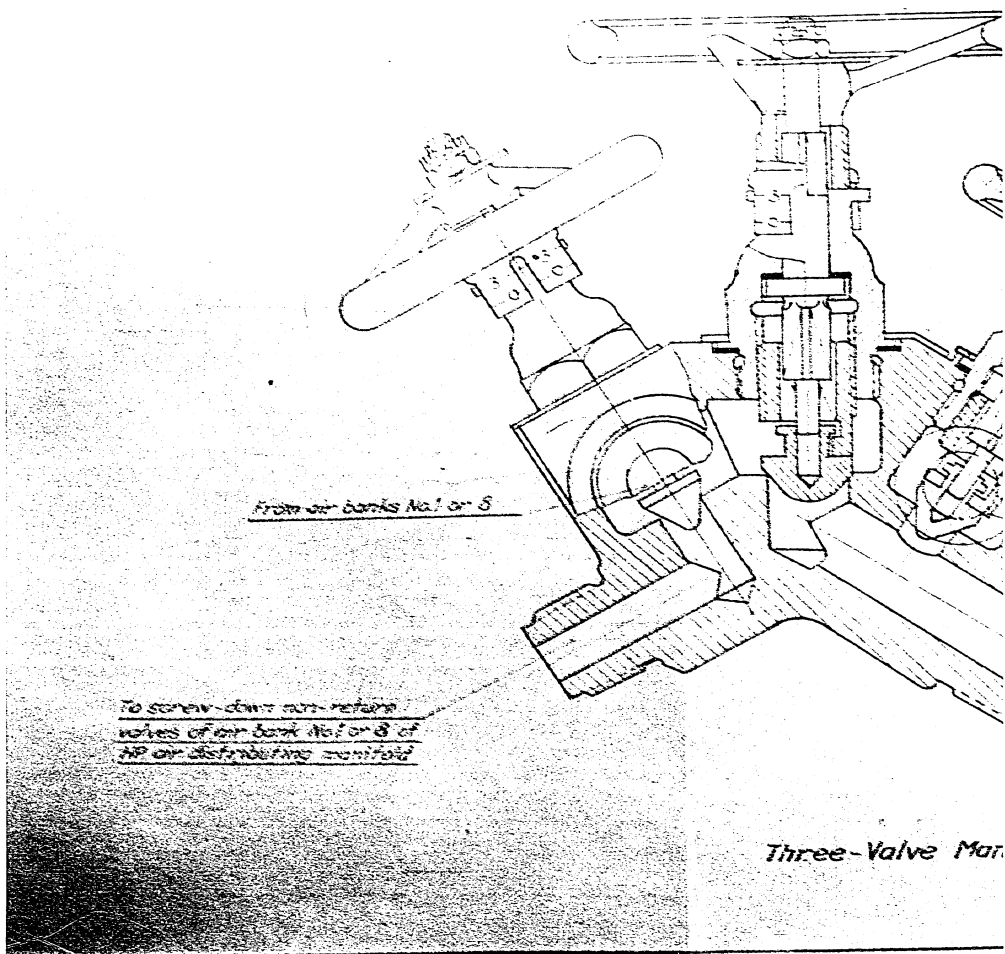


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